Minutes of the 21 August 2003 meeting of the Oregon and Northern California Coast (ONCC) Technical Recovery Team (TRT) Oregon Coast Work Group (OCWG), Corvallis, Oregon

Attendance. *OCWG Members:* Tom Nickelson, Gordie Reeves, Pete Lawson, Tom Wainwright, Mark Chilcote, Kelly Moore; *Staff:* Heather Stout, Rosemary Furfey, Bridgette Lohrman; *Visitors:* Justin Mills (National Marine Fisheries Service, Northwest Regional Office--NMFS/NWR).

The meeting convened at 10:25 am.

1. **Introductions.** Justin Mills was introduced. He is on a 6-month appointment with NMFS/NWR to develop habitat datasets and analyses for upcoming critical habitat designations. GIS products he is preparing should also be useful to the TRT.

2. **Review of Minutes (Stout).** Minutes of the 17 July meeting were approved and will be posted on the NWFSC website (http://www.nwfsc.noaa.gov/trt/trt_orcoast.htm).

3. **Population Analyses.** Three brief reports on tasks were presented.

a) Intrinsic Potential Approach (Nickelson)—Tom has been working with Kelly Burnett (CLAMS project) and Jeff Rodgers (ODFW) on calculations of Intrinsic Potential (IP) for coho salmon habitat. To better reflect habitat value of lowland lakes and wetlands, they are basing the calculation on flood-plain area instead of stream miles. Lakes are being incorporated as surface area. Initial calculations showed some anomalies (e.g. high potential in some upper watershed streams) because of a difference in the calculation of valley-width index (VWI) criteria between large and small streams. Final calculation will use the same VWI criteria for all streams. Revised results are not yet finished; should be ready in 2-3 weeks.

b) Historic abundance (Nickelson)—Tom has calculated abundance from turn-of-century cannery pack records, assuming 40% harvest rates. Pete has a paper on 1950s abundance estimates based on mark-recapture studies.

c) Index of independence (Nickelson)—Eric Bjorkstedt will be re-calculating the independence index based on basin-wide total IP and distance separating stream mouths. This analysis needs to include the Columbia River (IP estimated from cannery pack) and the Rogue River (historic IP estimates still to be done).

4. **Population Approach.** The main part of the meeting focused on finalizing the approach for identifying populations. This was a far-ranging discussion, but mainly fell into three parts:

   a) Review of population structure (all)—A variety of issues relating to population structure, delineation, and classification were discussed. We discussed issues of scale and metapopulation concepts, particularly terminology regarding inter-ESU and intra-ESU structure, noting that some authors consider that the term "metapopulation" should be applied only at smaller (intra-ESU) demographic time and space scales, while others view metapopulation structure as a continuum that extends from individual breeding groups ("demes") up to full species. It was noted

that "stray" rates among freshwater reaches are relatively high, so demes would be fairly large within basins. We discussed the appropriateness of source-sink metapopulation concepts within basins, and the relevance of island-mainland concepts to interactions between large and small basins along the coast. We also discussed two types of independence: "potential independence" (based on whether a population could sustain itself without nearby populations) and "effective independence" (based on the degree of interactions with other populations).

b) Terminology and definitions (all)—The above discussion led to a re-examination of our population terminology and definitions. Previously, we had proposed three categories of populations based primarily on historic abundance: primary, secondary, and other. The "secondary" category was seen as problematic because populations of the same size could be classified either as primary or secondary depending on the degree of isolation from other populations. We decided to revise the population categories to explicitly reflect consideration of both size and isolation. We propose three categories:

Functionally independent populations—Definition follows the VSP report definition of an independent population: any population "whose population dynamics or extinction risk over a 100-year time period is not substantially altered by exchanges of individuals with other populations." (VSP, p. 3)

Potentially independent populations—These are populations that are not functionally independent, but would have a high likelihood of sustaining themselves over a 100-year time period if isolated from other populations.

Dependent populations—These are populations that are would not have a high likelihood of persisting over a 100-year time period in isolation from other populations.

"Population" above is used in a general sense to refer to any group of one or more adjacent local breeding units (demes) that interact more strongly within the group than with demes outside the group. In classifying populations, size is the most important criteria in distinguishing dependent from potentially independent populations; i.e. dependent populations are those below some minimum viable population or habitat criterion, and thus are sustained by migrants. Isolation is the main consideration distinguishing functionally and potentially independent populations; whether a potentially independent population is functionally independent depends on its context, i.e. whether there are large, nearby populations that significantly influence it.

There was discussion about whether we need the middle (potentially independent) category, or could get by with just two categories. The group felt that the middle category could be important in considering whole ESU viability in that populations in this category could serve a role as extinction buffers when catastrophes hit the funtionally-independent populations.

c) Classification criteria (all)—The different roles of population size and isolation in the definitions above suggests a simple graphical rule for classification. If population size is plotted on the x-axis, and population isolation on the y-axis

(similar to Bjorkstedt's draft plots), then a vertical line can be drawn to separate dependent from potentially independent populations. To the right (larger populations) of this line, a horizontal line will separate potentially from functionally independent populations. Where these lines are drawn requires deciding the acceptable degree of extinction risk (for the population size criterion) and degree of isolation. Both criteria may change as we improve analyses. For the preliminary analysis in our 6 August draft report, tentative criteria are: a first (vertical) cut at 15 habitat miles and a second (horizontal) at an independence index of about 4 on the Bjorkstedt draft graph. This will of course change when the analysis is redone using IP as the population-size scale.

We also considered criteria for subdividing river basins into smaller population units (prior to the independence classification), and concluded that for the Oregon coast, ecoregions should be the main basis, recognizing that ecoregion influence can extend downstream from the mapped ecoregion boundaries. This will be the approach used to subdivide the Umpqua Basin.

5. **Task Reports**

a) Critical Habitat (Mills)—Justin has developed a set of fish habitat use maps based on ODFW's 1:100K coho usage maps. Habitat use is being used in a decision-tree to rank importance of stream reaches based on three factors: productivity, utilization, and potential.

b) Rapid bioassessment analysis (Lawson)—The rapid bioassessment presence/absence dataset turned out to be too complicated for a quick analysis. Pete and Justin will continue to look at it.

c) Coordination with state (Furfey)—The federal-state coordinating group met once. They are working on wording for the memorandum of agreement (MOA). The NMFS Federal Register notice regarding revised listing status for 26 ESUs is now expected to be published in March, based on the new hatchery policy (still pending).

d) Recovery Strategy and Status Report (Furfey)—Rosemary is continuing work on this document, expect a review draft available in early September.

e) Tribal liaison (Furfey)—There is a briefing with the Coquille and Siletz tribes September 3rd to discuss various NWR projects.

f) Web site (Lohrman)—Bridgette is working on a revision of the ONCC pages on the Northwest Fishery Science Center website. She will coordinate this with the TRT co-chairs.

g) Recovery planning presentation (Lohrman)—Bridgette gave the first public presentation of our slide show to the MidCoast Watershed Council. They were very receptive, but wanted more specifics in the talk.

h) Watershed Council needs assessment (Lohrman)—Twelve of 19 surveys have been returned; Bridgette is following up on the remainder.

i) DIP letter (Furfey)—The “Dear Interested Parties” letter is complete and being printed. It will be sent to 60+ addresses.

6. **Task Assignments**

   a) Population approach paper—Gordie will try improving the metapopulation section.

   b) Population report—This report will incorporate the approach paper in the introduction. Tom N will work on straying data; others will contribute sections to the report. Heather will merge contributions into the report.

7. **Future meetings.** Full TRT meeting 23 September, Corvallis. Oregon Coast work group meetings 14 October, 18 November, 16 December. The fasttrack team will meet as needed this month.

8. **Public Comment.** None.

9. **Adjouned.**